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Editorial.—The oldest herbarium on record has been found in the form of garlands of dried flowers recently discovered on the breasts of mummies. The flowers are so well preserved that the colors of the petals and the color of the leaves are almost perfect.

Mr. J. G. Lemmon and wife are off again for Arizona. One would have supposed that the experience of their last trip would have sufficed for a lifetime; but as long as a plant remains to be discovered, these intrepid explorers will try to find it.

Prof. F. L. Harvey, of Fayetteville, Ark., writes that the peach trees in that region this spring are producing a great many multiple carpels. In some trees nearly all the flowers have formed multiple fruits, varying from doublets to quadruplets. The freak does not appear to be local, but notices of it are to be seen in the state papers. The trees have not borne for two years and it seems like an effort to make up for lost time.

Miss M. B. Flint, of Brookhaven, Miss., reports finding, April 27th, a full-grown leaf of *Catalpa speciosa* with two midribs. The leaf was of normal shape at base, but above it forked, forming two tips, each one of them slenderly acuminate. If the midribs had been superimposed the leaf would have been the typical form. The growth was on a young seedling and was the only monstrosity the plant showed.

Prof. A. B. Seymour of Ills. Univ., Champaign, writes that near the last of April he found *Ophioglossum vulgatum*, L., growing in wooded bottom lands near the Pine Hills in the most northwest part of Union Co., Ills. Only a single plant has been previously reported in Illinois and that was found in Wabash Co. Professor Seymour counted near fifty plants and there were probably more.

It appears that the genus *Chara* is not all plain sailing. It contains such an inextricable tangle of forms that it is hard to draw lines of classification. In the *American Naturalist* for May, Dr. T. F. Allen describes and figures 9 American "forms" of *C. coronata*, which he does not pretend can be called varieties. It is to be hoped that this devoted student will bring order out of chaos so that others may have the courage to enter the field.

The Torrey Bulletin for April is an unusually full number,

containing quite an elaborate paper on the "Development of the Cortex in Chara" by our chief authority on that group of plants, Dr. T. F. Allen. This paper is accompanied by 8 plates. Another plate illustrates Mr. Joseph Schrenk's note on the "Development of the Root-stock of Dicentra cucullaria." Other notes by Prof. D. C. Eaton, W. W. Bailey, F. Lamson Scribner, Thomas Meehan and others complete the contents of this very interesting number.

Robert Clark & Co., of Cincinnati, propose to publish a periodical to be called "The American Journal of Forestry," as a practical outgrowth of the Forestry Convention recently held in that city. The object is a splendid one, but it appears to us that the majority of the names of the proposed contributors are names much more distinguished in departments having nothing to do with Forestry, just as was the case with the convention referred to. The list contains some splendid names, but many of them are more pretentious than of any actual value.

Too much care can not be given to the careful writing and proof reading of scientific articles. There should the same exactness be demanded in this regard as in the statement of facts. The errors which now creep into our most careful journals are the results either of careless writing or careless proof-reading. Authors can greatly diminish the percentage of errors by writing with perfect plainness, always going on the supposition that the printer is absolutely ignorant of every word and correctness depends upon the distinct formation of every letter. There was a time when all carelessly written manuscripts were copied in this office, but that time has long since past, and authors usually have no one to blame but themselves when mistakes occur in their articles. We are glad to learn that measures are about to be taken by leading naturalists to correct this in the more formal papers submitted for publication, by a more careful examination of them, both in manuscript and proof.

Mr. Lester F. Ward has published a "Guide to the Flora of Washington and Vicinity" as the 26th Bulletin of the U. S. National Museum. It forms a pamphlet of 264 pages, with a large map, and is a most exhaustive affair. It is really an elaboration of an outline presented to the Philosophical Society of Washington last year, and noticed before in these pages. Many useful hints can here be obtained by those preparing local catalogues. Not the least valuable part of the work is the Appendix, in which full directions are given to beginners in the matter of collecting, preserving, arranging, exchanging, etc. The advice in these respects is unusually sensible, and worth following. Ordinarily, the best plan for the beginner is not to read such advice until he has developed his own methods and then he does not need it. It is often as impracticable as it well can be, and there are almost as many ways of collecting, preserving, etc., as there are botanists, and most of them answer the pur-

pose very well. Mr. Ward's advice, however, will not encumber the most precise disposition. The writer must confess that he has about the same feeling in regard to this whole subject as he has expressed in the matter of microscopes. An herbarium, like a microscope, should not be an end, but simply a means to an end, and when it ceases to be that, it becomes a mere toy, like a collection of postage stamps or crockery. It is to be feared that the craze for collecting has infected too many of our botanists whose whole enjoyment of their plants is the miser's enjoyment of his gold. All the collecting that is being done in this country should yield us richer returns of information. Every herbarium, however small, should be a perennial fountain and not a stagnant pool. Mr. Ward enforces well the real object of an herbarium, but that part of his advice will be less heeded than the mechanrical part.

The Leaves of Aquatic Plants.—The leaves of aquatic plants may be divided into 3 classes; aerial, floating and immersed. The first class has stomata on both sides of the leaf; the second, on the upper side only; and the last class has none at all. In the first two, the air can be taken through the stomata directly into the leaf; in the last class, the necessary gases not existing as a body (of air) in the water, there is no use for stomata, which would take up water as well as air. So we have breathing holes in the leaves disconnected from direct contact with water and into which carbon dioxide is absorbed for the use of the plant (Bot. Gaz., Vol. VI. No. 8). These are the well-known intercellular spaces. So we see that it is a natural division.

To the first class belong the leaves of the subaquatic or marsh plants, which root in the water and send their branches into the air, as in *Nasturtium officinale*.

To the next belong the leaves of *Nymphæaceæ*, *Limnanthemum*, *Orontium* and *Marsilea*, raised by petioles to the water surface, also those of *Schollera* and *Callitrichaceæ* (aquatic forms) raised by stems to the same level. The peduncles of some water flowers are also elongated to get to the air.

To the last class belong some *Isoetes*, *Potamogetons*, *Vallisneria*, *Ranunculus divaricatus*, and most *Utricularieæ*.

Some plants combine the second and last classes, having both floating and immersed leaves (some species of *Potamogeton*).

Some, the first and last classes, have both aerial and immersed leaves, as *Nasturtium lacustre* and *Myriophyllum*.

A few plants having stomata (first class), beginning their existence in the water, emerge as the latter dries up.

Plants of the second class, disconnected from the land and often very small, are sometimes matted to keep the stomata-bearing surface upward. This is effected in *Azolla* by its branching habit, in